<110>   Johnson & Johnson Pty Ltd
         Unisearch Limited

<120>   CATALYTIC MOLECULES

<130>   ATKINS1

<140>   09/889,075
<141>   2002-09-09

<150>   PCT/AU00/00011
<151>   2000-01-11

<150>   PQ8103
<151>   1999-01-11

<160>   23

<170>   PatentIn version 3.4

<210>   1
<211>   3132
<212>   DNA
<213>   Homo sapiens

<400>   1
ccgcagaact tggggagccg ccgccgccat ccgccgccgc agccagcttc cgccgccgca   60

ggaccggccc ctgccccagc ctccgcagcc gcggcgcgtc cacgcccgcc cgcgcccagg   120

gcgagtcggg gtcgccgcct gcacgcttct cagtgttccc cgcgccccgc atgtaacccg   180

gccaggcccc cgcaacggtg tcccctgcag ctccagcccc gggctgcacc cccccgcccc   240

gacaccagct ctccagcctg ctcgtccagg atggccgcgg ccaaggccga gatgcagctg   300

atgtccccgc tgcagatctc tgacccgttc ggatcctttc ctcactcgcc caccatggac   360

aactaccta agctggagga gatgatgctg ctgagcaacg gggctcccca gttcctcggc   420

gccgccgggg ccccagaggg cagcggcagc aacagcagca gcagcagcag cgggggcggt   480

ggaggcggcg ggggcggcag caacagcagc agcagcagca gcaccttcaa ccctcaggcg   540

gacacgggcg agcagcccta cgagcacctg accgcagagt cttttcctga catctctctg   600

aacaacgaga aggtgctggt ggagaccagt taccccagcc aaaccactcg actgccccccc   660

atcacctata ctggccgctt ttccctggag cctgcaccca cagtggcaa caccttgtgg   720

cccgagcccc tcttcagctt ggtcagtggc ctagtgagca tgaccaaccc accggcctcc   780

tcgtcctcag caccatctcc agcggcctcc tccgcctccg cctcccagag cccacccctg   840

agctgcgcag tgccatccaa cgacagcagt cccatttact cagcggcacc caccttcccc   900

acgccgaaca ctgacatttt ccctgagcca caaagccagg ccttcccggg ctcggcaggg   960

acagcgctcc agtacccgcc tcctgcctac cctgccgcca agggtggctt ccaggttccc   1020

atgatccccg actacctgtt tccacagcag caggggatc tgggcctggg cacccccagac   1080

cagaagcccc tccagggcct ggagagccgc acccagcagc cttcgctaac ccctctgtct   1140

actattaagg cctttgccac tcagtcgggc tcccaggacc tgaaggccct caataccagc   1200

```
taccagtcccc agctcatcaa acccagccgc atgcgcaagt atcccaaccg gcccagcaag    1260

acgcccccccc acgaacgccc ttacgcttgc ccagtggagt cctgtgatcg ccgcttctcc    1320

cgctccgacg agctcacccg ccacatccgc atccacacag gccagaagcc cttccagtgc    1380

cgcatctgca tgcgcaactt cagccgcagc gaccacctca ccacccacat ccgcacccac    1440

acaggcgaaa agcccttcgc ctgcgacatc tgtggaagaa agtttgccag gagcgatgaa    1500

cgcaagaggc ataccaagat ccacttgcgg cagaaggaca agaaagcaga caaaagtgtt    1560

gtggcctctt cggccacctc ctctctctct tcctacccgt ccccggttgc tacctcttac    1620

ccgtccccgg ttactacctc ttatccatcc ccggccacca cctcataccc atcccctgtg    1680

cccacctcct tctcctctcc cggctcctcg acctacccat ccctgtgca cagtggcttc    1740

ccctccccgt cggtggccac cacgtactcc tctgttcccc ctgctttccc ggcccaggtc    1800

agcagcttcc cttcctcagc tgtcaccaac tccttcagcg cctccacagg gctttcggac    1860

atgacagcaa ccttttctcc caggacaatt gaaatttgct aaagggaaag gggaaagaaa    1920

gggaaaaggg agaaaaagaa acacaagaga cttaaaggac aggaggagga gatggccata    1980

ggagaggagg gttcctctta ggtcagatgg aggttctcag agccaagtcc tccctctcta    2040

ctggagtgga aggtctattg gccaacaatc ctttctgccc acttcccctt ccccaattac    2100

tattcccttt gacttcagct gcctgaaaca gccatgtcca agttcttcac ctctatccaa    2160

agaacttgat ttgcatggat tttggataaa tcatttcagt atcatctcca tcatatgcct    2220

gacccccttgc tcccttcaat gctagaaaat cgagttggca aaatggggtt tgggcccctc    2280

agagccctgc cctgcaccct tgtacagtgt ctgtgccatg gatttcgttt ttcttggggt    2340

actcttgatg tgaagataat ttgcatattc tattgtatta tttggagtta ggtcctcact    2400

tgggggaaaa aaaaaaaaa aagccaagca aaccaatggt gatcctctat tttgtgatga    2460

tgctgtgaca ataagtttga acctttttt ttgaaacagc agtcccagta ttctcagagc    2520

atgtgtcaga gtgttgttcc gttaaccttt ttgtaaatac tgcttgaccg tactctcaca    2580

tgtggcaaaa tatggtttgg ttttttcttt ttttttttga aagtgttttt tcttcgtcct    2640

tttggtttaa aaagtttcac gtcttggtgc cttttgtgtg atgccccttg ctgatggctt    2700

gacatgtgca attgtgaggg acatgctcac ctctagcctt aaggggggca gggagtgatg    2760

atttggggga ggctttggga gcaaaataag gaagagggct gagctgagct tcggttctcc    2820

agaatgtaag aaaacaaaat ctaaacaaa atctgaactc tcaaaagtct attttttaa    2880

ctgaaaatgt aaatttataa atatattcag gagttggaat gttgtagtta cctactgagt    2940

aggcggcgat ttttgtatgt tatgaacatg cagttcatta ttttgtggtt ctattttact    3000

ttgtacttgt gtttgcttaa acaaagtgac tgtttggctt ataaacacat tgaatgcgct    3060

ttattgccca tgggatatgt ggtgtatatc cttccaaaaa attaaaacga aaataaagta    3120

gctgcgattg gg                                                       3132
```

<210> 2

<211> 15
<212> DNA
<213> Artificial

<220>
<223> synthetic

<220>
<221> misc_feature
<223> Catalytic domain of DNAzyme

<400> 2
ggctagctac aacga   15

<210> 3
<211> 33
<212> DNA
<213> Artificial

<220>
<223> synthetic

<220>
<221> misc_feature
<223> DNAzyme

<400> 3
caggggacag gctagctaca acgacgttgc ggg   33

<210> 4
<211> 33
<212> DNA
<213> Artificial

<220>
<223> synthetic

<220>
<221> misc_feature
<223> DNAzyme

<400> 4
tgcaggggag gctagctaca acgaaccgtt gcg   33

<210> 5
<211> 33
<212> DNA
<213> Artificial

<220>
<223> synthetic

<220>
<221> misc_feature
<223> DNAzyme

<400> 5
catcctggag gctagctaca acgagagcag gct   33

<210> 6

<211> 33
<212> DNA
<213> Artificial

<220>
<223> synthetic

<220>
<221> misc_feature
<223> DNAzyme

<400> 6
ccgcggccag gctagctaca acgacctgga cga   33

<210> 7
<211> 33
<212> DNA
<213> Artificial

<220>
<223> synthetic

<220>
<221> misc_feature
<223> DNAzyme

<400> 7
ccgctgccag gctagctaca acgacccgga cgt   33

<210> 8
<211> 33
<212> DNA
<213> Artificial

<220>
<223> synthetic

<220>
<221> misc_feature
<223> DNAzyme

<400> 8
gcggggacag gctagctaca acgacagctg cat   33

<210> 9
<211> 33
<212> DNA
<213> Artificial

<220>
<223> synthetic

<220>
<221> misc_feature
<223> DNAzyme

<400> 9
cagcggggag gctagctaca acgaatcagc tgc   33

<210> 10

```
<211>    33
<212>    DNA
<213>    Artificial

<220>
<223>    synthetic


<220>
<221>    misc_feature
<223>    DNAzyme

<400>    10
ggtcagagag gctagctaca acgactgcag cgg                              33


<210>    11
<211>    3068
<212>    DNA
<213>    Mus musculus

<400>    11
gggggagccgc cgccgcgatt cgccgccgcc gccagcttcc gccgccgcaa gatcggcccc     60

tgccccagcc tccgcggcag ccctgcgtcc accacgggcc gcggctaccg ccagcctggg    120

ggcccaccta cactccccgc agtgtgcccc tgcaccccgc atgtaacccg gccaaccccc    180

ggcgagtgtg ccctcagtag cttcggcccc gggctgcgcc caccacccaa catcagttct    240

ccagctcgct ggtccgggat ggcagcggcc aaggccgaga tgcaattgat gtctccgctg    300

cagatctctg acccgttcgg ctcctttcct cactcaccca ccatggacaa ctaccccaaa    360

ctggaggaga tgatgctgct gagcaacggg gctccccagt tcctcggtgc tgccggaacc    420

ccagagggca gcggcggtaa tagcagcagc agcaccagca gcggggggcgg tggtgggggc    480

ggcagcaaca gcggcagcag cgccttcaat cctcaagggg agccgagcga acaaccctat    540

gagcacctga ccacagagtc cttttctgac atcgctctga ataatgagaa ggcgatggtg    600

gagacgagtt atcccagcca aacgactcgg ttgcctccca tcacctatac tggccgcttc    660

tccctggagc ccgcacccaa cagtggcaac actttgtggc ctgaaccccct tttcagccta    720

gtcagtggcc tcgtgagcat gaccaatcct ccgacctctt catcctcggc gccttctcca    780

gctgcttcat cgtcttcctc tgcctcccag agcccgcccc tgagctgtgc cgtgccgtcc    840

aacgacagca gtcccatcta ctcggctgcg cccacctttc ctactcccaa cactgacatt    900

tttcctgagc cccaaagcca ggcctttcct ggctcggcag gcacagcctt gcagtacccg    960

cctcctgcct accctgccac caaaggtggt ttccaggttc ccatgatccc tgactatctg   1020

tttccacaac aacagggaga cctgagcctg ggcacccccag accagaagcc cttccagggt   1080

ctggagaacc gtacccagca gccttcgctc actccactat ccactattaa agccttcgcc   1140

actcagtcgg gctcccagga cttaaaggct cttaatacca cctaccaatc ccagctcatc   1200

aaacccagcc gcatgcgcaa gtaccccaac cggcccagca agacaccccc ccatgaacgc   1260

ccatatgctt gccctgtcga gtcctgcgat cgccgctttt ctcgctcgga tgagcttacc   1320

cgccatatcc gcatccacac aggccagaag cccttccagt gtcgaatctg catgcgtaac   1380
```

```
ttcagtcgta gtgaccacct taccacccac atccgcaccc acacaggcga gaagcctttt   1440

gcctgtgaca tttgtgggag gaagtttgcc aggagtgatg aacgcaagag gcataccaaa   1500

atccatttaa gacagaagga caagaaagca gacaaagtg tggtggcctc cccggctgcc   1560

tcttcactct cttcttaccc atccccagtg gctacctcct acccatcccc tgccaccacc   1620

tcattcccat cccctgtgcc cacttcctac tcctctcctg gctcctccac ctacccatct   1680

cctgcgcaca gtggcttccc gtcgccgtca gtggccacca cctttgcctc cgttccacct   1740

gctttcccca cccaggtcag cagcttcccg tctgcgggcg tcagcagctc cttcagcacc   1800

tcaactggtc tttcagacat gacagcgacc ttttctccca ggacaattga aatttgctaa   1860

agggaataaa agaaagcaaa gggagaggca ggaaagacat aaaagcacag gagggaagag   1920

atggccgcaa gaggggccac ctcttaggtc agatggaaga tctcagagcc aagtccttct   1980

actcacgagt agaaggaccg ttggccaaca gccctttcac ttaccatccc tgcctccccc   2040

gtcctgttcc ctttgacttc agctgcctga aacagccatg tccaagttct tcacctctat   2100

ccaaaggact tgatttgcat ggtattggat aaatcatttc agtatcctct ccatcacatg   2160

cctggccctt gctcccttca gcgctagacc atcaagttgg cataaagaaa aaaaaatggg   2220

tttgggccct cagaaccctg ccctgcatct ttgtacagca tctgtgccat ggattttgtt   2280

ttccttgggg tattcttgat gtgaagataa tttgcatact ctattgtatt atttggagtt   2340

aaatcctcac tttggggggag gggggagcaa agccaagcaa accaatgatg atcctctatt   2400

ttgtgatgac tctgctgtga cattaggttt gaagcatttt tttttcaag cagcagtcct   2460

aggtattaac tggagcatgt gtcagagtgt tgttccgtta attttgtaaa tactggctcg   2520

actgtaactc tcacatgtga caaagtatgg tttgtttggt tgggttttgt ttttgagaat   2580

tttttttgccc gtccctttgg tttcaaaagt ttcacgtctt ggtgccttt gtgtgacacg   2640

ccttccgatg gcttgacatg cgcagatgtg agggacacgc tcaccttagc cttaaggggg   2700

taggagtgat gtgttggggg aggcttgaga gcaaaaacga ggaagagggc tgagctgagc   2760

tttcggtctc cagaatgtaa gaagaaaaaa tttaaacaaa aatctgaact ctcaaaagtc   2820

tatttttcta aactgaaaat gtaaatttat acatctattc aggagttgga gtgttgtggt   2880

tacctactga gtaggctgca gttttttgtat gttatgaaca tgaagttcat tattttgtgg   2940

ttttatttta ctttgtactt gtgtttgctt aaacaaagta acctgtttgg cttataaaca   3000

cattgaatgc gctctattgc ccatgggata tgtggtgtgt atccttcaga aaaattaaaa   3060

ggaaaaat                                                           3068
```

<210> 12
<211> 4321
<212> DNA
<213> Rattus rattus

<400> 12
```
ccgcggagcc tcagctctac gcgcctggcg ccctccctac gcgggcgtcc ccgactcccg     60

cgcgcgttca ggctccgggt tgggaaccaa ggaggggag ggtgggtgcg ccgacccgga    120
```

```
aacaccatat aaggagcagg aaggatcccc cgccggaaca gaccttattt gggcagcgcc    180

ttatatggag tggcccaata tggccctgcc gcttccggct ctgggaggag gggcgaacgg    240

gggttggggc gggggcaagc tgggaactcc aggagcctag cccgggaggc cactgccgct    300

gttccaatac taggctttcc aggagcctga gcgctcaggg tgccggagcc ggtcgcaggg    360

tggaagcgcc caccgctctt ggatgggagg tcttcacgtc actccgggtc ctcccggtcg    420

gtccttccat attagggctt cctgcttccc atatatggcc atgtacgtca cggcggaggc    480

gggcccgtgc tgtttcagac ccttgaaata gaggccgatt cggggagtcg cgagagatcc    540

cagcgcgcag aacttgggga gccgccgccg cgattcgccg ccgccgccag cttccgccgc    600

cgcaagatcg gcccctgccc cagcctccgc ggcagccctg cgtccaccac gggccgcggc    660

caccgccagc ctgggggccc acctacactc cccgcagtgt gcccctgcac cccgcatgta    720

acccggccaa catccggcga gtgtgccctc agtagcttcg gccccgggct gcgcccacca    780

cccaacatca gctctccagc tcgcacgtcc gggatggcag cggccaaggc cgagatgcaa    840

ttgatgtctc cgctgcagat ctctgacccg ttcggctcct ttcctcactc acccaccatg    900

gacaactacc ccaaactgga ggagatgatg ctgctgagca acggggctcc ccagttcctc    960

ggtgctgccg gaaccccaga gggcagcggc ggcaataaca gcagcagcag cagcagcagc   1020

agcagcgggg gcggtggtgg gggcggcagc aacagcggca gcagcgcttt caatcctcaa   1080

ggggagccga gcgaacaacc ctacgagcac ctgaccacag gtaagcggtg gtctgcgccg   1140

aggctgaatc ccccttcgtg actaccctaa cgtccagtcc tttgcagcac ggacctgcat   1200

ctagatctta gggacgggat tgggatttcc ctctattcca cacagctcca gggacttgtg   1260

ttagagggat gtctggggac cccccaaccc tccatccttg cgggtgcgcg gagggcagac   1320

cgtttgtttt ggatggagaa ctcaagttgc gtgggtggct ggagtggggg agggtttgtt   1380

ttgatgagca gggttgcccc ctcccccgcg cgcgttgtcg cgagccttgt ttgcagcttg   1440

ttcccaagga agggctgaaa tctgtcacca gggatgtccc gccgcccagg gtaggggcgc   1500

gcattagctg tggccactag ggtgctggcg ggattccctc accccggacg cctgctgcgg   1560

agcgctctca gagctgcagt agaggggat tctctgtttg cgtcagctgt cgaaatggct   1620

ctgccactgg agcaggtcca ggaacattgc aatctgctgc tatcaattat taaccacatc   1680

gagagtcagt ggtagccggg cgacctcttg cctggccgct tcggctctca tcgtccagtg   1740

attgctctcc agtaaccagg cctctctgtt ctctttcctg ccagagtcct tttctgacat   1800

cgctctgaat aacgagaagg cgctggtgga dacaagttat cccagccaaa ctacccggtt   1860

gcctcccatc acctatactg gccgcttctc cctggagcct gcacccaaca gtggcaacac   1920

tttgtggcct gaacccctttt tcagcctagt cagtggcctt gtgagcatga ccaaccctcc   1980

aacctcttca tcctcagcgc cttctccagc tgcttcatcg tcttcctctg cctcccagag   2040

cccaccccctg agctgtgccg tgccgtccaa cgacagcagt cccatttact cagctgcacc   2100

cacctttcct actcccaaca ctgacatttt tcctgagccc caaagccagg cctttcctgg   2160
```

```
ctctgcaggc acagccttgc agtacccgcc tcctgcctac cctgccacca agggtggttt      2220

ccaggttccc atgatccctg actatctgtt tccacaacaa cagggagacc tgagcctggg      2280

cacccccagac cagaagccct tccagggtct ggagaaccgt acccagcagc cttcgctcac     2340

tccactatcc actatcaaag ccttcgccac tcagtcgggc tcccaggact taaaggctct      2400

taataacacc taccagtccc aactcatcaa acccagccgc atgcgcaagt accccaaccg      2460

gcccagcaag acacccccc atgaacgccc gtatgcttgc cctgttgagt cctgcgatcg       2520

ccgcttttct cgctcggatg agcttacacg ccacatccgc atccatacag gccagaagcc      2580

cttccagtgt cgaatctgca tgcgtaattt cagtcgtagt gaccacctta ccacccacat      2640

ccgcacccac acaggcgaga agccttttgc ctgtgacatt tgtgggagaa agtttgccag      2700

gagtgatgaa cgcaagaggc ataccaaaat ccacttaaga cagaaggaca agaaagcaga      2760

caaaagtgtc gtggcctcct cagctgcctc ttccctctct cctacccat ccccagtggc       2820

tacctcctac ccatcccccg ccaccacctc atttccatcc ccagtgccca cctcttactc      2880

ctctccgggc tcctctacct acccgtctcc tgcacacagt ggcttcccat cgccctcggt      2940

ggccaccacc tatgcctccg tcccacctgc tttccctgcc caggtcagca ccttccagtc      3000

tgcaggggtc agcaactcct tcagcacctc aacgggtctt tcagacatga cagcaacctt      3060

ttctcctagg acaattgaaa tttgctaaag ggaatgaaag agagcaaagg gaggggagcg      3120

cgagagacaa taaaggacag gagggaagaa atggcccgca agaggggctg cctcttaggt      3180

cagatggaag atctcagagc caagtccttc tagtcagtag aaggcccgtt ggccaccagc      3240

cctttcactt agcgtccctg ccctccccag tcccggtcct tttgacttca gctgcctgaa      3300

acagccacgt ccaagttctt cacctctatc caaaggactt gatttgcatg gtattggata      3360

aaccatttca gcatcatctc caccacatgc ctggcccttg ctcccttcag cactagaaca      3420

tcaagttggc tgaaaaaaaa aatgggtctg ggccctcaga accctgccct gtatctttgt      3480

acagcatctg tgccatggat tttgttttcc ttggggtatt cttgatgtga agataatttg      3540

catactctat tgtactattt ggagttaaat tctcactttg ggggagggg agcaaagcca       3600

agcaaaccaa tggtgatcct ctattttgtg atgatcctgc tgtgacatta ggtttgaaac      3660

ttttttttt ttttgaagca gcagtcctag gtattaactg gagcatgtgt cagagtgttg       3720

ttccgttaat tttgtaaata ctgctcgact gtaactctca catgtgacaa aatacggttt      3780

gtttggttgg gttttttgtt gtttttgaaa aaaaatttt ttttttgccc gtccctttgg       3840

tttcaaaagt ttcacgtctt ggtgcctttg tgtgacacac cttgccgatg gctggacatg      3900

tgcaatcgtg aggggacacg ctcacctcta gccttaaggg ggtaggagtg atgtttcagg      3960

ggaggcttta gagcacgatg aggaagaggg ctgagctgag ctttggttct ccagaatgta      4020

agaagaaaaa tttaaaacaa aaatctgaac tctcaaaagt ctattttttt aactgaaaat      4080

gtagatttat ccatgttcgg gagttggaat gctgcggtta cctactgagt aggcggtgac      4140

ttttgtatgc tatgaacatg aagttcatta ttttgtggtt ttattttact tcgtacttgt      4200
```

Page 8

gtttgcttaa acaaagtgac ttgtttggct tataaacaca ttgaatgcgc tttactgccc   4260

atgggatatg tggtgtgtat ccttcagaaa aattaaaagg aaaataaaga aactaactgg   4320

t   4321

<210> 13
<211> 19
<212> RNA
<213> Rattus rattus

<400> 13
acguccggga uggcagcgg   19

<210> 14
<211> 19
<212> RNA
<213> Homo sapiens

<400> 14
ucguccagga uggccgcgg   19

<210> 15
<211> 34
<212> DNA
<213> Artificial

<220>
<223> synthetic

<220>
<221> misc_feature
<223> DNAzyme

<220>
<221> misc_feature
<222> (33)..(34)
<223> 3'-3-linked T

<400> 15
caggggacag gctagctaca acgacgttgc gggt   34

<210> 16
<211> 34
<212> DNA
<213> Artificial

<220>
<223> synthetic

<220>
<221> misc_feature
<223> DNAzyme

<220>
<221> misc_feature
<222> (33)..(34)
<223> 3'-3-linked T

<400> 16
tgcaggggag gctagctaca acgaaccgtt gcgt   34

```
<210>    17
<211>    34
<212>    DNA
<213>    Artificial

<220>
<223>    synthetic


<220>
<221>    misc_feature
<223>    DNAzyme

<220>
<221>    misc_feature
<222>    (33)..(34)
<223>    3'-3-linked T

<400>    17
catcctggag gctagctaca acgagagcag gctt                          34


<210>    18
<211>    34
<212>    DNA
<213>    Artificial

<220>
<223>    synthetic


<220>
<221>    misc_feature
<223>    DNAzyme

<220>
<221>    misc_feature
<222>    (33)..(34)
<223>    3'-3-linked T

<400>    18
tcagctgcag gctagctaca acgactcggc cttt                          34


<210>    19
<211>    34
<212>    DNA
<213>    Artificial

<220>
<223>    synthetic


<220>
<221>    misc_feature
<223>    DNAzyme

<220>
<221>    misc_feature
<222>    (33)..(34)
<223>    3'-3-linked T

<400>    19
gcggggacag gctagctaca acgacagctg catt                          34
```

<210> 20
<211> 15
<212> DNA
<213> Rattus rattus

<400> 20
cttggccgct gccat   15

<210> 21
<211> 22
<212> RNA
<213> Synthetic Rat

<400> 21
gcacguccgg auggcagcgg cc   22

<210> 22
<211> 34
<212> DNA
<213> Synthetic Rat

<400> 22
ccgctgccag gctagctaca acgacccgga cgtt   34

<210> 23
<211> 34
<212> DNA
<213> Synthetic Rat

<400> 23
gccagccgcg gctagctaca acgatggctc cact   34